

TWO BIOTYPES OF *BANGASTERNUS ORIENTALIS*
(COLEOPTERA: CURCULIONIDAE) FOUND IN GREECE

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Abstract.—Adults of *Bangasternus orientalis* (Capiomont) were collected on *Centaurea calcitrapa* L., purple starthistle (PST) and *C. solstitialis* L., yellow starthistle (YST) in Greece. The adults collected on YST did not breed on PST and the adults collected on PST did not breed on YST, indicating that they are two biotypes, each one specialized on one *Centaurea* species.

Key Words: Weeds, *Centaurea*, starthistle, Insecta, Curculionidae, weevils

Adults of *Bangasternus orientalis* (Capiomont) were collected on *Centaurea calcitrapa* L., purple starthistle (PST), on June 26, 1982, 44 km south of Igoumenitsa, along the road to Preveza, Greece. Two males and two females were placed on branches of *Centaurea solstitialis* L., yellow starthistle (YST), in a sleeve cage of about 20 × 50 cm at the University Farm, Thessaloniki. The weevils lived for over one month on the plant without ovipositing. Specimens were also collected on YST during May and June 1981-1982, in Thermi, 8 km south of Thessaloniki and oviposited on YST under the same conditions. All of the specimens were identified by the late D. R. Whitehead (Systematic Entomology Laboratory, Washington, D.C.) and by E. Colonnelli (University of Rome) as *B. orientalis*. There was, however, an indication that there were different biotypes or perhaps subspecies which could not be identified on the basis of morphological characters.

A more detailed study was carried out during 1991 in Greece to determine the host specificity and oviposition of *B. orientalis* on YST and PST. Rosettes of YST and PST were collected from the area near Thessa-

loniki and were planted at the University Farm on March 23. Three field cages (1 × 1 × 1 m) were placed over the plants on May 15 to prevent the attack of capitulum-feeding insects. Five YST plants were planted under one cage and three PST plants under each of the other cages. Ten male and ten female weevils were field collected on YST plants on May 31 and released in one of the cages with the PST plants. Twenty males and twenty females were collected on PST plants on May 31 (at the beginning of their oviposition period); of these, ten males and ten females were released in the cage with YST plants and ten males and ten females were released in the other cage with PST plants (control). Females were field collected at the beginning of the season and when used in a longevity test, they lived up to 118 days and females laid eggs for up to 95 days. Therefore, there was no risk of females having laid all their eggs in the field, before they were collected (Sobhian et al. 1992). All of the adults were collected near Thermi. No *B. orientalis* from YST were caged on YST as a control because from previous studies it was known that they would breed on YST under similar condi-

Table 1. Susceptibility of YST and PST as hosts for *Bangasternus orientalis* collected on YST or PST

	Adults Collected on YST and Caged on PST		
	PST	YST	PST (control)
No. larvae	0	0	15
No. pupae	0	0	2
No. adults	0	0	4

tions (Sobhian et al. 1992). Samples of seed-heads of YST and PST test plants were collected on August 1, and dissected under a stereomicroscope ($n = 150/\text{cage}$). The results are summarized in Table 1. Adults collected on YST did not breed on PST and adults collected on PST did not breed on YST, however adults collected on PST bred on the control plants. The experiment carried out during 1991 confirmed the results that were obtained during 1982.

Following the definition suggested by Diehl and Bush (1984), there appear to be two biotypes of *B. orientalis* in Greece. Diehl and Bush defined biotypes as conspecific populations which differ in some biological trait. As Zwoelfer and Romstoeck-Voelkl

(1991) noted, biotypes have important implications for the biological control of insect pests and weeds as well as for pest management.

A host race study using electrophoresis is planned to determine the enzymatic differences between these weevils. It is also planned to carry out a cross-mating study between the two biotypes to determine if they produce fertile eggs.

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